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10/729,362	12/04/2003	Yin Chen	SVL920030093US2	8230

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EXAMINER
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ALHIJA, SAIF A

ART UNIT	PAPER NUMBER
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2128

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01/24/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/729,362

Applicant(s)

CHEN ET AL.

Examiner

Saif A. Alhija

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-26 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-26, and 28-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

1. Claims 1-6, 8-26, and 28-30 have been presented for examination.

Claims 7 and 27 have been cancelled.

**Response to Arguments**

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 October 2007 has been entered.

i) Applicant's arguments with respect to claims 1-6, 8-26, and 28-30 have been considered but are moot in view of the new ground(s) of rejection.

ii) A 101 rejection has also been presented below.

iii) Examiner has cited particular columns and line numbers in the references applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

iv) The Examiner respectfully requests, in the event the Applicants choose to amend or add new claims, that such claims and their limitations be directly mapped to the specification, which provides support for the subject matter. This will assist in expediting compact prosecution.

v) Further, the Examiner respectfully encourages Applicants to direct the specificity of their response with regards to this office action to the broadest reasonable interpretation of the claims as presented. This will avoid issues that would delay prosecution such as limitations not explicitly presented in the claims, intended use statements that carry no patentable weight, mere allegations of patentability, and novelty that is not clearly expressed.

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**PRIORITY**

3. Acknowledgment is made of applicant's claim for priority to provisional application 60/510833 filed on 14 October 2003.

**Claim Rejections - 35 USC § 101**

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**MPEP 2106 recites:**

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result" State Street 149 F.3d at 1373, 47 USPQ2d at 1601-02. A process that consists solely of the manipulation of an abstract idea is not concrete or tangibles. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed.Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

4. **Claims 1-6, 8-26, and 28-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

i) The claims recite data which as per paragraph 49 of the specification of the instant application can encompass electronic signals "and may exist, at least partially, merely as electronic signals on a system or network". Signals are non-statutory and therefore the claims are rendered non-statutory.

Appropriate correction is required.

All claims dependent upon a rejected base claim are rejected by virtue of their dependency.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claim(s) 1-6, 8-26, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al. "Modular Architecture for Optimizing a Configuration of a Computer System", U.S. Patent Application No. 2003/0208284, hereafter referred to as Stewart in view of Woodbury et al., "Performance Modeling and Measurement of Real-Time Multiprocessors with Time-Shared Buses", hereafter Woodbury.**

**Regarding Claim 1:**

A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to model and analyze a plurality of computing workloads, the code comprising:

a data collection module configured to dynamically populate a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads;

wherein the modeling module is configured to execute a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models;

a data analysis module configured to present analysis data compiled from the modeling module;

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and a framework configured to manage the data collection module, the modeling module, and the data analysis module in response to a predefined data and model flow.

The Stewart reference discloses data collection (Abstract), gathering performance data (Paragraph 19-21), data analysis (Paragraph 19-21) as well as a framework to manage the data collection (Figure 3, and its corresponding description).

The Stewart reference does not explicitly disclose dynamically populating the data through polling of a computer system. The Examiner notes that this distinction lies only in that Stewart utilizes data gathered from a system which is then simulated and then the simulation of the system is modeled and analyzed rather than as Applicants have argued gathering data directly from an actual system.

Woodbury teaches, on page 216 left column, the workload of a real-time system which is then analyzed through polling, Section III.

Woodbury further teaches the data analysis and modeling in Section IV, Experimental Workloads, B-C.

The real time gathering of data can be seen in Woodbury and the analysis framework can be seen in Stewart in the cited sections above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to gather data from an actual system in real-time, as discussed in Woodbury, for the analysis in Stewart in order to monitor an actual system as it runs.

**Regarding Claim 2:**

The reference discloses The computer program product of claim 1, wherein the framework is configured to selectively operate a predefined data collection module or a user-defined data collection module in response to the predefined data and model flow. (Stewart. Paragraph 24. Batch vs Console, for example.)

**Regarding Claim 3:**

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**The reference discloses** The computer program product of claim 1, wherein the framework is configured to selectively operate a predefined model or a user-defined model in response to the predefined data and model flow. (Stewart. Paragraph 24)

**Regarding Claim 4:**

**The reference discloses** The computer program product of claim 1, wherein the framework is configured to selectively operate a predefined data analysis module or a user-defined data analysis module in response to the predefined data and model flow. (Stewart. Paragraph 24)

**Regarding Claim 5:**

**The reference discloses** The computer program product of claim 1, wherein the framework is integrated within a predefined user interface. (Stewart. Paragraph 24)

**Regarding Claim 6:**

**The reference discloses** The computer program product of claim 1, wherein the framework is integrated within a third party application. (Stewart. Paragraph 116)

**Regarding Claim 8:**

**The reference discloses** The computer program product of claim 1, wherein the modeling module is further configured to execute a plurality of models in parallel. (Stewart. Page 3, Problem Spec Sample)

**Regarding Claim 9:**

**The reference discloses** The computer program product of claim 1, wherein the framework is configured to implement the predefined data and model flow at least in part by defining a workload software object from a persistent data structure, the workload software object comprising parameters for the data collection module, modeling module, and data analysis module. (Stewart. Page 3, Problem Spec Sample. Paragraph 114)

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**Regarding Claim 10:**

**The reference discloses** The computer program product of claim 1, further comprising an editor configured to allow a user to define and store the predefined data and model flow. **(Stewart. Paragraph 25)**

**Regarding Claim 11:**

**The reference discloses** The computer program product of claim 1, wherein the at least one model is selected from the group of models consisting of a workload prediction model, a performance analysis model, an optimization model, and a user-defined model. **(Stewart. Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Abstract)**

**Regarding Claim 12:**

**See rejection for claim 1.**

**Stewart does not explicitly disclose** a plot module for designating a data analysis module configured to present analysis data compiled from the at least one model.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to graphically plot the result data provided by **Stewart** in order to allow for user simplicity.

**Regarding Claim 13:**

**Stewart discloses** The computer program product of claim 12, further comprising a storage module configured to store and retrieve the data and model flow from a persistent data structure. **(Stewart. Paragraph 114. Page 3, Problem Spec Sample)**

**Regarding Claim 14:**

**Stewart discloses** The computer program product of claim 13, wherein the persistent data structure comprises an eXtensible Markup Language (XML) file. **(Stewart. Page 3, Problem Spec Sample)**



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**Regarding Claim 15:**

**Stewart discloses** The computer program product of claim 13, wherein the persistent data structure comprises a database. (Stewart. Paragraph 9)

**Regarding Claim 16:**

**See rejection for claim 1 as well as (Stewart. Page 3, Problem Spec Sample. Figure 3, element 308, and its corresponding description. Paragraph 69-70. Abstract.) for**

a computer program product embodied on a computer readable medium and comprising code that when executed causes a computer to implement a data analysis module configured to present analysis data compiled from the workload module in response to an event.

**Regarding Claim 17:**

**The reference discloses** The system of claim 16, further comprising a user interface configured to execute one or more workload modules within the run-time manager in response to a user request, each workload modules defining a data and model flow specifically designed for the computer system, the data and model flow defined within a persistent data structure. (Stewart. Abstract. Figure 3, and its corresponding description)

**Regarding Claim 18:**

**The reference discloses** The system of claim 16, wherein the event comprises analysis data that fails to satisfy a threshold value. (Stewart. Paragraph 21)

**Regarding Claim 19:**

**Stewart discloses** The system of claim 16, wherein the event comprises a user request for analysis data. (Stewart. Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Abstract)

**Stewart does not explicitly disclose** the data analysis module presenting the analysis data to a user by way of a user-definable plotting module.

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However, it would have been obvious to one of ordinary skill in the art at the time of the invention to graphically plot the result data provided by **Stewart** in order to allow for user simplicity.

**Regarding Claim 20:**

**The reference discloses** The system of claim 16, further comprising an event handler that executes a predefined action in response to the event. (**Stewart. Paragraph 29**)

**Regarding Claim 21:**

A computer program product embodied on a computer readable medium and comprising code that when executed causes a computer to implement an application programming interface (API) for modeling and analyzing of computing workloads, comprising: a measurement software class configured to dynamically populate a measurement object in response to a polling inquiry from an instance of a run-time manager software class, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads; a workload software class that defines a data and model flow associated with the computer system, the workload software class comprising two or more model software classes that utilize the gathered performance data to model attributes of the computer system wherein the output data from a first model serves as input data for a second model in a hierarchy of models; and a wherein a run-time manager software class is configured to periodically poll for measurement objects instantiated from the measurement software class and execute one or more model objects instantiated from the one or more model software classes in response to the data and model flow defined by one or more workload objects (**See rejection for claim 1.**)

**Regarding Claim 22:**

**Stewart discloses** The computer program product of claim 21, further comprising a interface module configured to start and stop execution of one or more workload objects. (**Stewart. Page 3, Problem Spec Sample.**

**Figure 3 and its corresponding description)**

**See rejection and motivation for claim 1.**

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**Regarding Claim 23:**

**Stewart discloses the analysis data associated with a specific workload object identified by a user. (Page 3, Problem Spec Sample. Figure 3 and its corresponding description)**

**Stewart does not explicitly disclose** The computer program product of claim 21, wherein the interface is further configured to present analysis data compiled by a plot object instantiated from a plot class.

However, it would have been obvious to one of ordinary skill in the art to graphically plot the result data provided by **Stewart** in order to allow for user simplicity.

**Regarding Claim 24:**

**The reference discloses** A computer program product embodied on a computer readable medium and comprising code for modeling and analyzing a plurality of computing workloads that when executed causes a computer to perform the following: dynamically populating a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads; executing a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models; presenting analysis data compiled from the at least one model; and providing a framework configured to manage the gathering of performance data, the execution of the at least one model, and the presentation of the analysis data in response to a predefined data and model flow. **(Stewart. Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Paragraph 19-21. Abstract. See also rejection and motivation for claim 1)**

**Regarding Claim 25:**

**The reference discloses** The computer program product of claim 24, wherein the framework is executed from within a third-party application. **(Stewart. Paragraph 116)**

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**Regarding Claim 26:**

**The reference discloses** A computer program product embodied on a computer readable medium and comprising code for modeling and analyzing a plurality of computing workloads that when executed causes a computer to perform the following: dynamically populating a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads; executing a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models; presenting analysis data compiled from the at least one model; and providing a framework configured to manage the gathering of performance data, the execution of the at least one model, and the presentation of the analysis data in response to a predefined data and model flow. (Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Paragraph 19-21. Abstract. See also rejection and motivation for claim 1)

**Regarding Claim 28:**

**Stewart discloses** A computer program product embodied on a computer readable medium and comprising code for modeling and analyzing a plurality of computing workloads that when executed causes a computer to perform the following

specify a data and model flow for monitoring a computer system; invoke a modeling and analysis utility, wherein the data and model flow defines performance data that is dynamically populated in a measurement object in response to a polling inquiry from a modeling module, the measurement object comprising updated performance data associated with the operation of a computer system, the computer system comprising at least one physical processor and physical storage, the computer system executing a plurality of computing workloads; and models that are executed periodically using the performance data to compile analysis data representative of results from one or more of the models wherein output data from a first model serves as input data for a second model in a hierarchy of

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models; and receive a representation of the analysis data from the modeling and analysis utility, in response to an event. (See rejection for claim 1, Stewart in view of Woodbury)

Stewart in view of Woodbury do not explicitly disclose a “real-time graphical representation of the analysis data.”

It would have been obvious to one of ordinary skill in the art at the time of the invention to graphically plot the result data provided by Stewart in order to allow for user simplicity.

**Regarding Claim 29:**

Stewart and Woodbury The computer program product of claim 28, wherein the event comprises analysis data that fails to satisfy a threshold value. (Stewart. Paragraph 21)

**Regarding Claim 30:**

Stewart and Woodbury disclose The computer program product of claim 28, wherein the event comprises a user request. (Stewart. Page 3, Problem Spec Sample. Figure 3 and its corresponding description)

Stewart and Woodbury do not explicitly disclose the modeling and analysis utility presenting the graphical representation of the analysis data to a user by way of a user-defined plotting module.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to graphically plot the result data provided by Stewart in order to allow for user simplicity.

**Conclusion**

6. All Claims are rejected.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kamini Shah can be reached on (571) 272-22792279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAA

January 18, 2008

  
KAMINI SHAH  
SUPERVISORY PATENT EXAMINER